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ABSTRACT

This paper describes use of systems analysis or the Planning-Programming-Budgeting System (PPBS) in the education departments of developing countries. First, the systems approach in budgeting is described. Next, its use in education is considered. Finally, the paper recommends that educational planners assess needs and define goals and objectives as a first step towards implementation of the system. (Author/LD)

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RESEARCH UNIT FOR EDUCATION SYSTEM PLANNING

UNIVERSITY OF THE ORANGE FREE STATE

LECTURE-DISCUSSION PAPER NO. 6

A SYSTEMS APPROACH TO BUDGETING IN THE EDUCATION DEPARTMENTS OF DEVELOPING COUNTRIES

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FOREWORD

Frequently researchers of the Research Unit for Education system planning have lecture-discussions with educational planners of various education departments on topics in the field of educational planning.

This lecture-discussion series is an attempt to record the principal ideas expressed by the researchers during these discussions. It is an informal publication not subjected to the normal type of editing and must therefore not be seen as an official publication.

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A SYSTEMS APPROACH TO BUDGETING IN THE EDUCATION DEPARTMENTS OF DEVELOPING COUNTRIES

1. Introduction

It is expected that governments should make decisions regarding the allocation of community funds (tax). Such decisions relate to the classic economic dilemma, namely allocating scarce economic resources in such a way as to satisfy the maximum needs.

The governments in all countries are basically confronted with the same questions with relation to the allocation of the resources available for the execution of activities that would satisfy most of the community needs. Governments in developing countries, however, generally have additional problems. Needs are multiple, funds are more scarce and knowledge of sophisticated decision-making and management techniques is more limited than is the case in developed countries.

The process of the allocation of community funds (budgeting) to the different government departments, especially in developed countries, have in recent years been based on a systems approach to budgeting. Because of differences between developed and developing countries, and between different developing countries, it would be a tragic mistake to implement a structured approach of another country into your system. Every country should investigate its system of decision-making and budgeting and base the future course of action on pursuance of the investigation.

2. The approach of systems analysis

Essentially the approach relates to a framework for analysis. Hartley describes it as "an orderly way of identifying and ordering the differentiated components, relationships, processes, and other properties of anything that may be conceived as an integrative whole" (1968, p. 23). The different components are studied separately and its function and relation to and role in the total system analysed. The approach can be applied to many productive systems, including an educational system and its subsystems (Pitso, 1977, p. 132).

In the planning process it would seem appropriate to start off by clearly stating the goals and objectives of the department. It could be identified as the first step in systems analysis - to state the objectives to be sought. The next step would be to find alternative ways in which the stated objectives might be attained. Having decided on the best alternative in terms of the highest benefits and lowest cost, a course of action which includes a time-table should be put forward. This plan, when fully executed, must lead to achievement of the objectives.

The systems approach necessitates an evaluation of the present educational system so that recommendations can be put forward regarding future needs. The needs form the foundation for objectives, because the latter indicate the direction that should be taken to realize the needs.

An important advantage of the systems approach is that thinking is not only limited to immediate effects, but also takes into consideration long-term effects. This allows decision-makers more insight into the implications of decisions.

To summarize the section on the approach to systems analysis, the broad principles underlying the approach are given below:

- clearly state goals and objectives
- investigate alternative options to attain the stated objectives
- choose the alternative that would realize the best ratio between the highest benefits and the lowest cost
- decide on a course of action, including a time-table, to implement the chosen alternative
- implement the plan or programme
- evaluate the result to see whether the objective has been reached

3. The systems approach in budgeting

The systems approach as described above has been applied to budgeting procedures in a number of countries. It is commonly referred to as the planning-programming-budgeting system (PPBS).

The basic premise of PPBS is that policy and objectives cannot be separated from budgeting. The budget must reflect the policy and objectives of the education department. Cutt defines PPBS as "a marriage between overall planning and the translation of planning objectives into programmes on the one hand, and budgeting procedures on the other" (1974, p. 2).

The systems approach to budgeting is not something completely new nor is it a substitute for good management and a remedy for organizations who do not have funds to carry out activities (Hartley, 1968, p. 75). Alice Rivlin referred to it as "a commonsense approach to decision-making". She continues to say: "I fail to see how a secretary ... who wants to do a good job can get along without planning ahead, evaluating the effectiveness of programs, analyzing alternatives carefully, and making decisions in an orderly way in the light of maximum information. It does not matter what he chooses to call it, but he badly needs the basic tools of PPBS" (1970, pp. 516 - 517).

Traditional or line-item type of budgets according to categories such as salaries, subsistence and transport, postal and telegraph services etc. is commonly found in developing countries. Budgeting for future expenditure is also too often incremental, i.e. budgeted expenditure on every item is allowed to increase only by a certain specified percentage. The main objection to such an approach is that every item on the budget will probably increase every year without really being evaluated. Maurice Stans

who was budget director under President Eisenhower, said that "every item in a budget should be on trial for its life each year and matched against all other claimants to our resources" (Wildavsky and Hamman, 1968, p. 142).

PPBS requires an evaluation of alternative options, and choosing the course of action that will attain the stated objectives. Every alternative should take into account the data relating to forecasts of enrolment in different school levels, teacher requirements and costs for every option. Having this information available the decision-maker can evaluate alternatives systematically in terms of effectiveness and the demands of the objectives. The basis for decision-making is thus improved (Kiros, et al., 1975, p. 170).

Another advantage of this approach is that all the related costs are considered, therefore revealing the true costs of the programme. Consider for example, a teaching programme where some costs are borne by departments other than the Department of Education. Normally in line-item budgeting procedures where accounting categories exist, capital expenditure is not included as educational costs, but as costs accruing to the Department of Works. By including the capital expenditure under costs for education, a valid cost per student which is valuable to educational planners, can be calculated (Kiros, 1975, p. 170).

4. PPBS in the education of developing countries

Different views exist as to the possibility of implementation of PPBS in developing countries. Some feel that the system is too complicated and sophisticated to implement in developing countries. Galnoor and Gross believe that principles of the approach can be applied with good consequence (Galnoor and Gross, 1969, p. 38).

One could start off with an unsophisticated form of PPBS in education. Such an approach would mean that information will be available in support of decision-making. No present system from another country or government department, however, must be transplanted. Rather the Department of Education should design procedures based on the systems approach that would supplement the present system. Local personnel can be assisted and trained by experts to analyse and evaluate the educational system.

5. Summary of recommendations

5.1. Educational planners must compile and analyse the maximum statistical and other data with regard to the educational system. These serve as the basis for problem identification and assessment of educational needs which in turn are essential for national decision-making on priorities and resource allocation. Educational planners can play a very important role in what can be described as the first step in the direction of a systems approach to analysis.

5.2. Clearly defined educational goals and objectives based on the educational needs must be explicitly stated. They serve as guidelines for the future course of action for the Department of Education. Planners can play an advisory role in this matter, but it is essentially the politician's task to state policy.

5.3. The budgeting system should be such that the result of the implementation of the programmes will meet the stated objectives.

5.4. Budgets should cover the costs of implementation of the full programme, or the costs for at least five years in the case of long-term programmes.

5.5. Alternative courses of action to achieve the objectives must be investigated. The option that gives the best ratio between the lowest cost and the highest benefits must be accepted and implemented.

5.6. Finally it must be kept in mind that the systems approach requires a process of development and evolution. The present system must serve as the base, and modifications made in the light of the department's unique needs and in view of the information available.

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